



SPEC ACCEL™ ACC Result

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Bull

(Test Sponsor: Technische Universitaet Dresden)

NVIDIA Tesla K20X

Bull B515

SPECaccel_acc_peak = 2.07

SPECaccel_acc_base = 2.07

ACCEL license: 37A

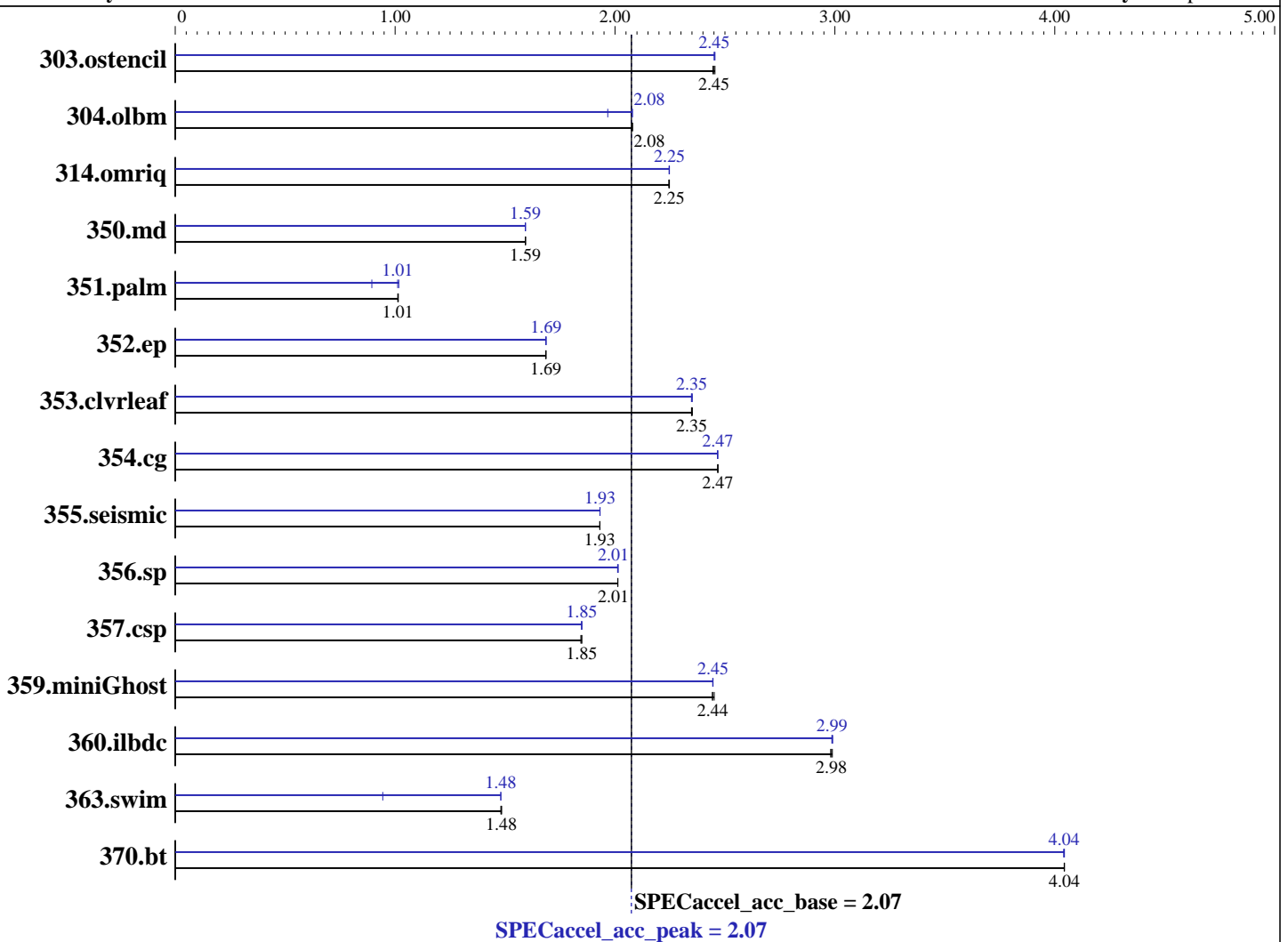
Test sponsor: Technische Universitaet Dresden

Tested by: Technische Universitaet Dresden

Test date: Dec-2015

Hardware Availability: Jul-2013

Software Availability: Sep-2015



Hardware

CPU Name: Intel Xeon E5-2450 0
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
 CPU MHz: 2100
 CPU MHz Maximum: 2900
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None

Continued on next page

Accelerator

Accel Model Name: Tesla K20X
 Accel Vendor: NVIDIA
 Accel Name: NVIDIA Tesla K20X
 Type of Accel: GPU
 Accel Connection: PCIe 2.0 16x
 Does Accel Use ECC: yes
 Accel Description: NVIDIA Tesla K20X, 2688 CUDA cores, 732 MHz
 6 GB GDDR5 RAM
 (Kepler Generation)
 Accel Driver: NVIDIA UNIX x86_64 Kernel Module 346.46



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Hardware (Continued)

Memory: 48 GB (6 x 8 GB 2Rx4 PC3-12800R-11)
Disk Subsystem: 62 GB SSD
Other Hardware: --

Software

Operating System: bullx Linux Server release 6.3 (V1)
Red Hat Enterprise Linux Server release 6.4 (Santiago)
2.6.32-504.12.2.el6.x86_64
Compiler: PGI Accelerator Server Complete, Release 15.9
File System: ext4
System State: Run Level 3 (Multi-User)
Other Software: NVIDIA CUDA SDK 7.0, driver version 346.46

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
303.ostencil	59.2	2.45	59.3	2.45	59.1	2.45	59.1	2.45	59.2	2.45	59.1	2.45
304.olbm	219	2.08	219	2.08	219	2.08	219	2.08	219	2.08	231	1.97
314.omriq	426	2.24	425	2.25	425	2.25	425	2.25	426	2.25	425	2.25
350.md	158	1.59	158	1.59	158	1.59	158	1.59	158	1.59	158	1.59
351.palm	365	1.01	365	1.01	365	1.01	366	1.01	364	1.02	414	0.894
352.ep	314	1.69	314	1.69	315	1.68	314	1.69	314	1.69	314	1.69
353.cvrleaf	189	2.35	190	2.35	189	2.35	189	2.35	189	2.35	190	2.35
354.cg	165	2.47	165	2.47	165	2.47	165	2.47	165	2.47	165	2.47
355.seismic	192	1.93	192	1.93	192	1.93	192	1.93	192	1.93	192	1.93
356.sp	137	2.01	137	2.01	137	2.01	137	2.01	137	2.01	137	2.01
357.csp	146	1.84	146	1.85	146	1.85	146	1.85	146	1.85	146	1.85
359.miniGhost	151	2.45	151	2.44	151	2.44	151	2.45	151	2.45	151	2.44
360.ilbdc	123	2.98	123	2.99	123	2.98	123	2.99	123	2.99	123	2.99
363.swim	155	1.48	155	1.48	155	1.48	155	1.48	244	0.944	155	1.48
370.bt	55.1	4.04	55.1	4.04	55.2	4.04	55.2	4.04	55.1	4.04	55.2	4.04

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Platform Notes

MultiThreading disabled in BIOS
Sysinfo program /tmp/spec-accel/1.1/Docs/sysinfo
\$Rev: 6965 \$ \$Date:: 2015-04-21 #\$ c05a7f14b1b1765e3fe1df68447e8a35
running on taurusi2019 Sat Dec 19 08:24:28 2015

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Platform Notes (Continued)

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: <http://www.spec.org/accel/Docs/config.html#sysinfo>

```
From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2450 0 @ 2.10GHz
    2 "physical id"s (chips)
    16 "processors"
  cores, siblings (Caution: counting these is hw and system dependent. The
  following excerpts from /proc/cpuinfo might not be reliable. Use with
  caution.)
    cpu cores : 8
    siblings  : 8
    physical 0: cores 0 1 2 3 4 5 6 7
    physical 1: cores 0 1 2 3 4 5 6 7
  cache size : 20480 KB
```

```
From /proc/meminfo
MemTotal:      49390188 kB
HugePages_Total:    0
Hugepagesize:   2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux taurusi2019 2.6.32-504.12.2.el6.x86_64 #1 SMP Sun Feb 1 12:14:02 EST
2015 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Oct 30 18:11
```

```
SPEC is set to: /tmp/spec-accel/1.1
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       ext4   62G  4.3G   55G   8% /tmp
```

Cannot run dmidecode; consider saying 'chmod +s /usr/sbin/dmidecode'

(End of data from sysinfo program)



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Base Compiler Invocation

C benchmarks:
pgcc

Fortran benchmarks:
pgfortran

Benchmarks using both Fortran and C:
pgcc pgfortran

Base Optimization Flags

C benchmarks:
-V15.9 -fast -acc -ta=tesla:tesla -ta=tesla:cuda7.0 -tp=sandybridge

Fortran benchmarks:
-V15.9 -fast -acc -ta=tesla:tesla -ta=tesla:cuda7.0 -tp=sandybridge

Benchmarks using both Fortran and C:

353.civrleaf: -V15.9 -fast -acc -ta=tesla:tesla -ta=tesla:cuda7.0
-tp=sandybridge

359.miniGhost: -V15.9 -fast -acc -ta=tesla:tesla -ta=tesla:cuda7.0
-tp=sandybridge -Mnomain

Peak Compiler Invocation

C benchmarks:
pgcc

Fortran benchmarks:
pgfortran

Benchmarks using both Fortran and C:
pgcc pgfortran

Peak Optimization Flags

C benchmarks:
-V15.9 -fast -acc -ta=tesla:beta -ta=tesla:cuda7.0 -tp=sandybridge

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Peak Optimization Flags (Continued)

Fortran benchmarks:

-V15.9 -fast -acc -ta=tesla:beta -ta=tesla:cuda7.0 -tp=sandybridge

Benchmarks using both Fortran and C:

353.cvrleaf: -V15.9 -fast -acc -ta=tesla:beta -ta=tesla:cuda7.0
-tp=sandybridge

359.miniGhost: -V15.9 -fast -acc -ta=tesla:beta -ta=tesla:cuda7.0
-tp=sandybridge -Mnomain

The flags file that was used to format this result can be browsed at

http://www.spec.org/accel/flags/pgi2014_flags.20160120.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/accel/flags/pgi2014_flags.20160120.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC ACCEL v1.1.
Report generated on Wed Jan 20 12:20:05 2016 by SPEC ACCEL PS/PDF formatter v1290.
Originally published on 20 January 2016.